

Claims

- [c1] What is claimed is:
1. An on-chip high-pass filter with large time constant, comprising:
 - a capacitor;
 - a first transistor having a first terminal connected to a first voltage source and a second terminal connected to the capacitor; and
 - a second transistor having a first terminal connected to the second terminal of the first transistor and a second terminal connected to ground;wherein the first transistor and the second transistor are for operating as a large-resistance resistor.
- [c2] 2. The on-chip high-pass filter of claim 1, wherein the first transistor is an n-type transistor.
- [c3] 3. The on-chip high-pass filter of claim 1, wherein the second transistor is a p-type transistor.
- [c4] 4. The on-chip high-pass filter of claim 1 further comprising a second voltage source connected to a third terminal of the first and the second transistor such that the first and the second transistor can be operated in a saturation mode.
- [c5] 5. The on-chip high-pass filter of claim 4, wherein the second voltage source includes:

a third transistor having a first terminal connected to the first voltage source, a second terminal connected to the third terminal of the first and the second transistor, and a third terminal connected to the second terminal thereof; and a fourth transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal connected to the first terminal thereof.

- [c6] 6.The on-chip high-pass filter of claim 4, wherein the second voltage source includes:
- a third transistor having a first terminal connected to the first voltage source, a second terminal, and a third terminal;
- a fourth transistor having a first terminal connected to the second terminal of the first transistor, a second terminal connected to ground, and a third terminal; and
- an amplifier having a first input terminal connected to the second terminal of the first transistor, a second input terminal connected to a bias voltage source, and an output terminal connected to the third terminal of the first, the second, the third, and the fourth transistor.